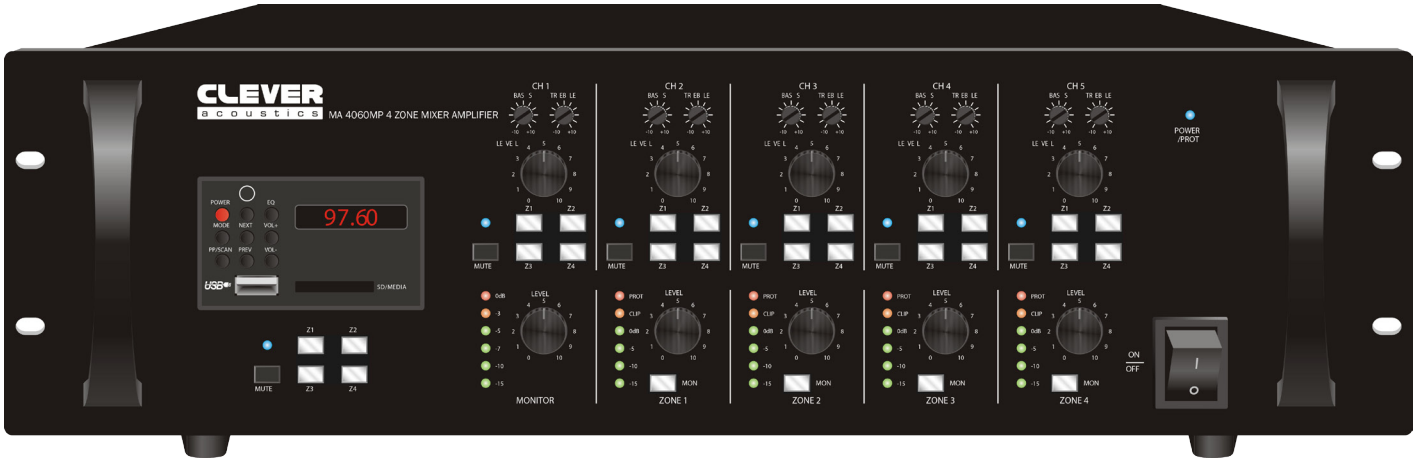
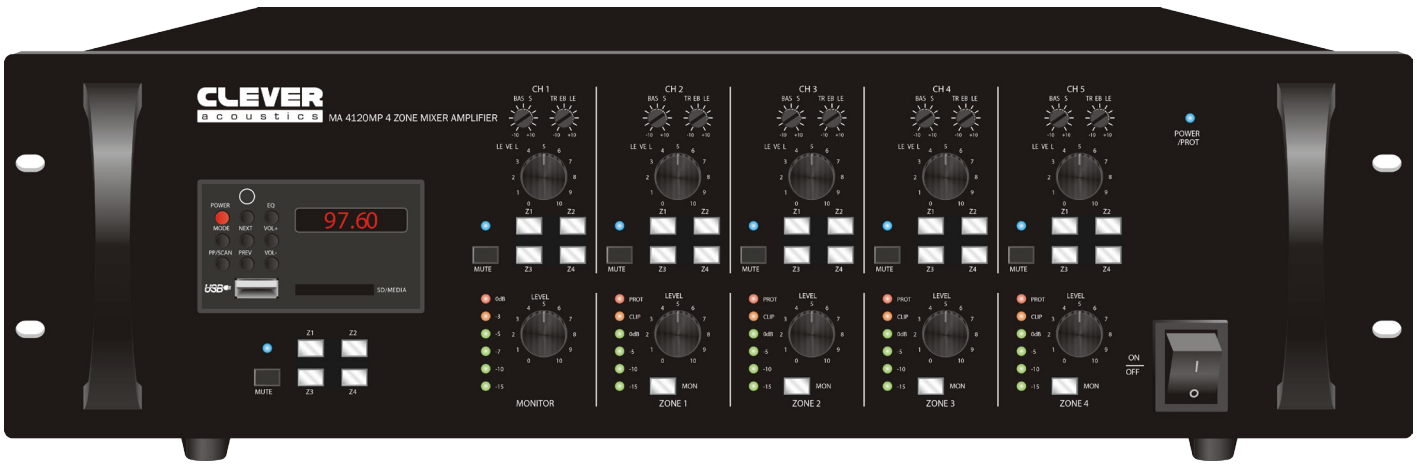
CLEVER acoustics

4 Zone Mixer Amplifier series
with MP3 & FM Tuner

User Manual





Order codes:

CRAM17 - MA 4060MP

CRAM18 - MA 4120MP

WARNING

FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE YOUR INITIAL START-UP!

- Before your initial start-up, please make sure that there is no damage caused during transportation.
- Should there be any damage, consult your dealer and do not use the equipment.
- To maintain the equipment in good working condition and to ensure safe operation, it is necessary for the user to follow the safety instructions and warning notes written in this manual.
- Please note that damages caused by user modifications to this equipment are not subject to warranty.

CAUTION!
KEEP THIS EQUIPMENT AWAY FROM RAIN, MOISTURE AND LIQUIDS

CAUTION!
TAKE CARE USING THIS EQUIPMENT!
HIGH VOLTAGE-RISK OF ELECTRIC SHOCK!!

IMPORTANT:

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorised modification to the equipment.

- Never let the power cable come into contact with other cables. Handle the power cable and all mains voltage connections with particular caution!
- Never remove warning or informative labels from the unit.
- Do not open the equipment and do not modify the unit.
- Do not switch the equipment on and off in short intervals, as this will reduce the system's life.
- Only use the equipment indoors.
- Do not expose to flammable sources, liquids or gases.
- Always disconnect the power from the mains when equipment is not in use or before cleaning! Only handle the power-cable by the plug. Never pull out the plug by pulling the power-cable.
- Make sure that the available voltage is between 240V, 50Hz.
- Make sure that the power cable is never crimped or damaged. Check the equipment and the power cable periodically.
- If the equipment is dropped or damaged, disconnect the mains power supply immediately and have a qualified engineer inspect the equipment before operating again.
- If the equipment has been exposed to drastic temperature fluctuation (e.g. after transportation), do not connect power or switch it on immediately. The arising condensation might damage the equipment. Leave the equipment switched off until it has reached room temperature.
- If your product fails to function correctly, stop use immediately. Pack the unit securely (preferably in the original packing material), and return it to your Pro Light dealer for service.
- Only use fuses of same type and rating.
- Repairs, servicing and power connection must only be carried out by a qualified technician. THIS UNIT CONTAINS NO USER SERVICEABLE PARTS.
- WARRANTY: One year from date of purchase.

OPERATING DETERMINATIONS

If this equipment is operated in any other way, than those described in this manual, the product may suffer damage and the warranty becomes void. Incorrect operation may lead to danger e.g: short-circuit, burns and electric shocks etc.

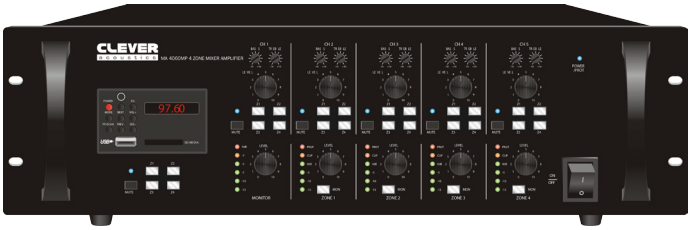
Do not endanger your own safety and the safety of others!

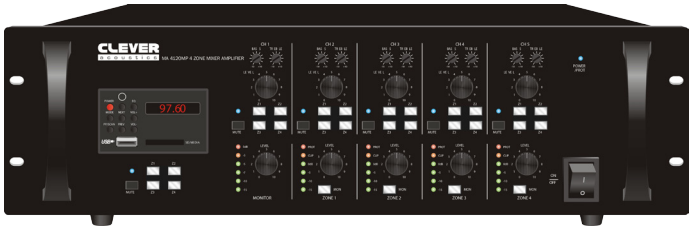
Incorrect installation or use can cause serious damage to people and/or property.

4 Zone Mixer Amplifier series

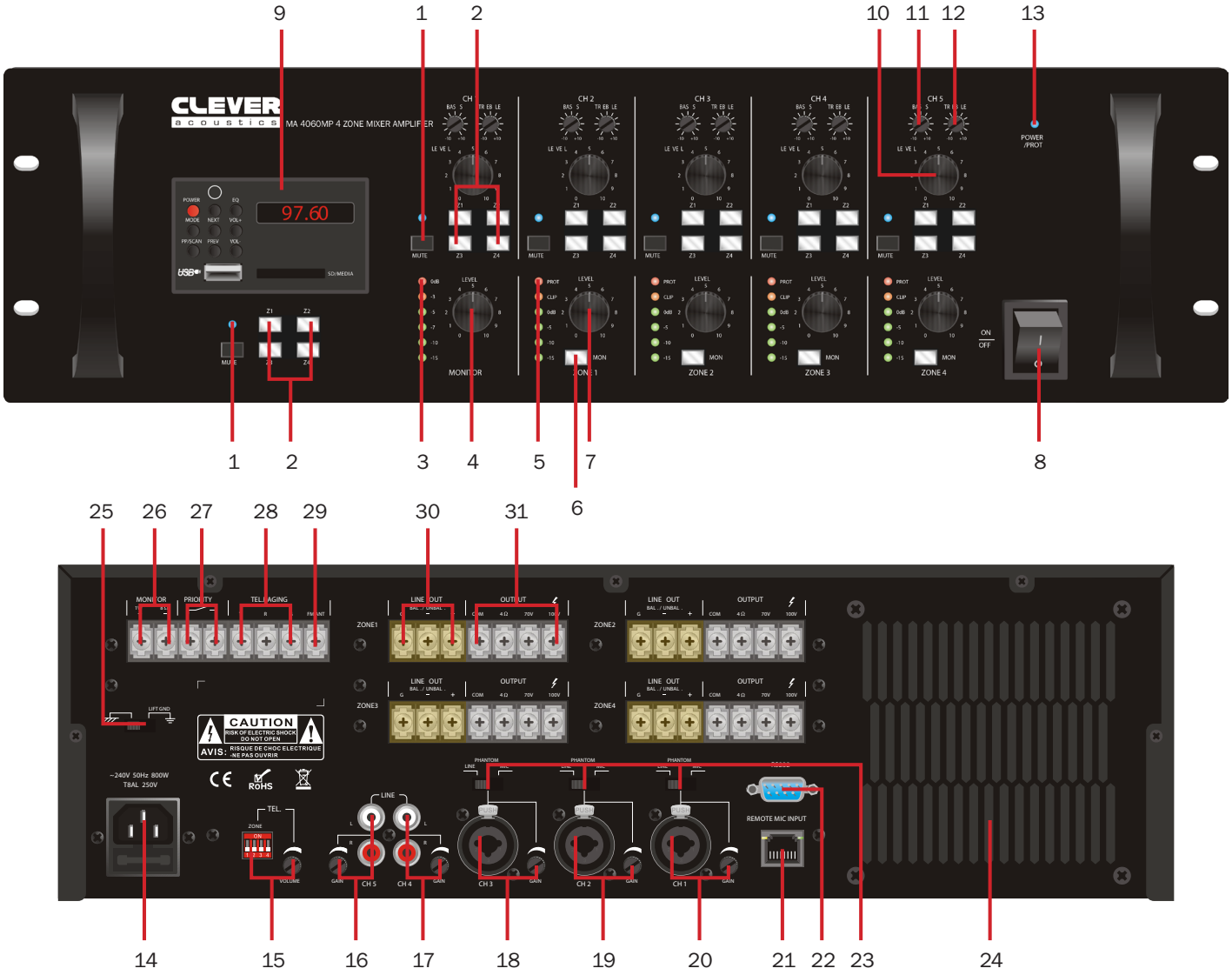
The MA 4060MP and MA 4120MP are fully featured, professional mixer amplifier with full onboard zoning facilities. This mixer amplifier features onboard MP3 (SD/USB) player and FM tuner complete with four zone output selection. Each input can be easily routed to any of the four zone outputs using the front panel selector, moreover each input features bass, treble and volume control for precise sound control. Three combo mic/line inputs with selector and phantom power, via XLR/6.35mm jack. Two phono line inputs, built-in MP3 player on front panel, one telephone input and one RJ45 port for a remote paging microphone PM 600. Up to six PM 600 microphones can be cascaded from each amplifier with simple easy connection via standard CAT5 cable.

- All source inputs can be matrix assigned to the 4 zone outputs simultaneously
- The 5 inputs channels plus onboard MP3 player and FM tuner
- Three microphone/line inputs with bass, treble, volume and gain control
- Two AUX phono inputs with bass, treble, volume and gain control
- MP3 player with SD and USB inputs
- 4 zone remote paging microphone input via RJ45 (requires CRMIC06 paging microphone)
- Versatile loudspeaker outputs for each four channels: 70V, 100V and 4-16Ω
- Line level, balanced outputs for each zone output
- RS232 serial control port for third party system communication
- Priority input to override other inputs
- Input priority level from high to low: remote mic, priority input and telephone input and MIC 1
- Output for monitor loudspeaker, 1W, 8Ω
- Extensive protection including thermal, short-circuit, clip and overload with indicators
- Ground lift switch
- Fan cooled





Specifications	MA 4060MP	MA 4120MP
Power output	4 x 60Wrms	4 x 120Wrms
Speaker output	70V, 100V, 4Ω	70V, 100V, 4Ω
Monitor output	1W/8Ω	1w/8Ω
Input sensitivity & impedance	CH1/2/3: ±2.5mV/600Ω, 175mV/10kΩ, balanced input CH5/6: 350mV/10kΩ, balanced input TEL: 350mV/10KΩ Remote MIC: ±837mV/10kΩ	CH1/2/3: ±2.5mV/600Ω, 175mV/10kΩ, balanced input CH5/6: 350mV/10kΩ, balanced input TEL: 350mV/10KΩ Remote MIC: ±837mV/10kΩ
Tone	Bass: ±10dB at 100Hz, Treble: ±10dB at 100Hz	Bass: ±10dB at 100Hz, Treble: ±10dB at 100Hz
SNR	≥65dB	≥65dB
Line 1-4 output level	1V/600Ω (balanced output)	1V/600Ω (balanced output)
Frequency response	80Hz-16kHz	80Hz-16kHz
MP3	Supports MP3 format, max. capacity: 32GB	Supports MP3 format, max. capacity: 32GB
Recording format	WAV	WAV
SD file system	FAT16 or FAT32 root folder is read only, the player does not support multiple folders	FAT16 or FAT32 root folder is read only, the player does not support multiple folders
Harmonic distortion	≤1%	≤1%
Power consumption	375W	750W
Power supply	240V AC 50Hz	240V AC 50Hz
Dimensions	132 x 484 x 440mm	132 x 484 x 440mm
Weight	9.4kg	13.5kg
Order code	CRAM17	CRAM18



In the box: **1 x unit, 1 x power cable, FM antenna & 1 x user manual**

Mute priority: MIC 1 highest priority ≥ telephone ≥ remote MIC. The telephone and MIC 1 priority can be reset via the rear panel short circuit terminals. Usually MIC 1 has the highest priority.

01 - Mute button and indicator
02 - Input routing
03 - Monitor output level indicator
04 - Monitor volume control
05 - Zone amplifier level indicator
06 - Zone monitor selector button
07 - Zone amplifier output volume control
08 - On/off power switch
09 - MP3/FM Tuner, with USB & SD card slot
10 - CH1 volume control
11 - CH1 low-pitched tone control
12 - CH1 high-pitched tone control
13 - Power indicator
14 - IEC in socket
15 - Telephone DIP switch and volume control
16 - CH5 line signal input and signal gain control
17 - CH4 line signal input and signal gain control
18 - CH3 microphone signal input and signal gain control
19 - CH2 microphone signal and signal gain control
20 - CH1 microphone signal and signal gain control
21 - Remote microphone input port
22 - RS232 port
23 - LINE, PHANTOM, MIC signal input selector switch
24 - Vents
25 - Ground lift switch
26 - Monitor output port
27 - Short circuit priority
28 - Telephone signal input port
29 - Radio antenna port
30 - Zone 1 balanced line level signal output
31 - Zone 1 output terminals (COM, 4Ω, 70V and 100V

Rack Installation

The MA Series are rack mountable. The rack you use should be a Double Door Rack where you can open the front and rear panel. When mounting the amplifier into the rack, please make sure that there is enough space around the amplifier.

Be careful when mounting the amplifier into the rack. Put the heaviest products into the lower part of the rack.

The front panel is not designed to absorb acceleration forces occuring during transportation.

Inputs

Short cables runs improve the sound quality remarkably. Input cables should be short and direct, since high frequencies will mostly be absorbed if the cables are unnecessarily long. Besides that a longer cable may lead to humming and noise problems. If the cable runs are unavoidable, you should use balanced cables.

Outputs

The high damping factor of your amplifier supplies a clear sound reproduction. Unnecessarily long and thin cables used for low impedance (4-16Ω) speakers will influence the damping factor and thus the low frequencies in a negative way. In order to safeguard good sound quality, the damping factor should lie around 50. The longer a cable has to be the thicker it should be. For longer cable runs please ensure the 100V outputs are used for 100V speakers.

Connect your speaker systems via the speaker terminals (COM = -VE)

Examples: 1) COM + 4-16Ω
2) COM + 70V
3) COM + 100V

Note: Please do not use more than one pair of output terminals on any one output zone.

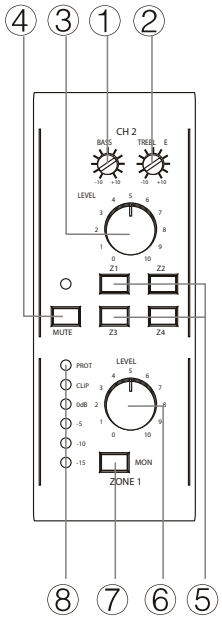
Connections To The Mains

Before connecting the amplifier to the local mains voltage outlet should be checked to ensure the available supply is 240V~AC 50Hz. This product is CLASS1 and requires a protective mains earth to be connected at all times. DO NOT remove or disconnect the earth..

Initial Start Up Procedure

- Reset all “Level” or “Volume” controls to the “0” position on the front panel. Reset the BASS and TREBLE controls to the centre point.
- Reset CH1 thru CH5 gain controls & TEL level control on the rear panel to the “0” position.
- Connect the audio sources & mains power input.
- Switch on the amplifier using the mains switch on the front panel. The LED indicator (13) will illuminate BLUE if the amplifier is ready for use and working correctly, if the indicator illuminates RED this indicates the amplifier is under PROTECT status.
- Adjust CH1 thru CH5 gain controls to match the input signal levels between different sources

CH1 to CH5 Operation (note: CH1 thru CH5 feature the same operation)



1) **BASS control:** BASS control offers tonal adjustment for the low frequency, turn clockwise to increase and anti-clockwise to decrease.

2) **TREBLE control:** TREBLE control offers tonal adjustment for the high frequency, turn clockwise to increase and anti-clockwise to decrease.

3) **VOLUME (LEVEL) control:** VOLUME (LEVEL) control offers adjustment for the corresponding input channel, turn clockwise to increase and anti-clockwise to decrease to reduce the volume.

4) **MUTE button:** Each channel input (CH1 thru CH5) may be muted by pressing the MUTE button. The button features LED illumination when muted.

5) **Z1 to Z4 Zone Selector buttons:** Each of the CH1 to CH5 input channels can be routed to any combination of the four output zones. The zone selector buttons feature LED illumination, the LED will illuminate if the zone is selected.

6) **VOLUME (LEVEL) control:** VOLUME (LEVEL) control offers adjustment for the corresponding output channel, turn clockwise to increase and anti-clockwise to decrease to reduce the volume.

7) **MON button:** The MA 4060MP and MA 4120MP amplifiers both feature a Monitor output function for status confirmation purposes. Select the MON button on the desired channel to activate the Monitor function. The Monitor output features a Volume (Level) control.

8) **Output VU Meter:** Each of the five outputs (Z1 to Z4 and MON) feature LED VU meter plus CLIP and PROTECTION status indicators. The CLIP LED will illuminate to indicate when the audio signal is too high, in this instance reduce the VOLUME by turning the volume control anti-clockwise. The PROTECT LED will illuminate if the amplifier detects a fault or a problem with the output circuit.

MP3 Player / FM Radio Operation:

POWER: The onboard MP3 Player & FM radio may be powered up or down independent of the main amplifier. Press the power switch to power on or power off the MP3/FM Radio.

MODE: Press the mode button to select FM Radio, SD Card or USB.

PP/SCAN: The FM radio tuner features automatic tuning, press the PP/SCAN button to activate the scan function.

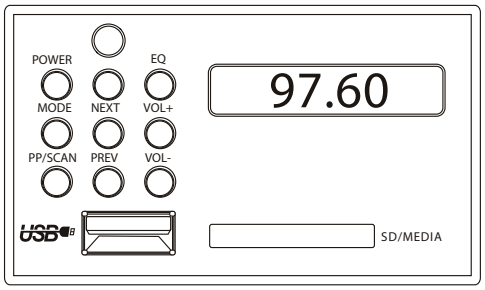
NEXT: Press the NEXT button to skip music tracks next when using the SD Card or USB.

PREV: Press the PREV button to skip music tracks previous when using the SD Card or USB.

EQ: Press the EQ button to adjust the equaliser settings for the SD Card/USB or FM Radio.

VOL +: Press the VOL + button to increase the volume for the SD Card/USB or FM Radio.

VOL -: Press the VOL - button to decrease the volume for the SD Card/USB or FM Radio.



Priority Paging Function:

MIC1 features the highest priority in.

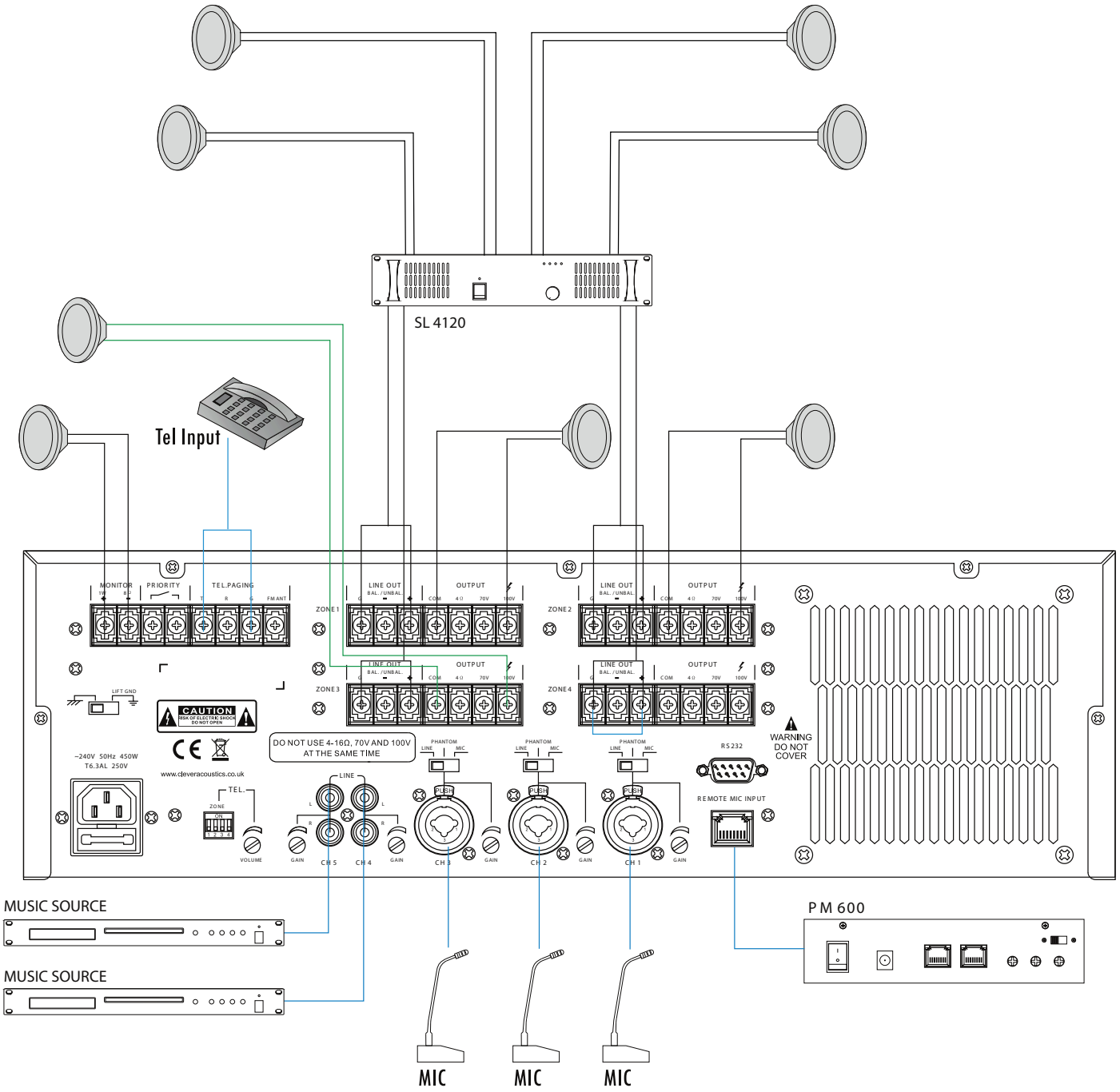
Machine operation

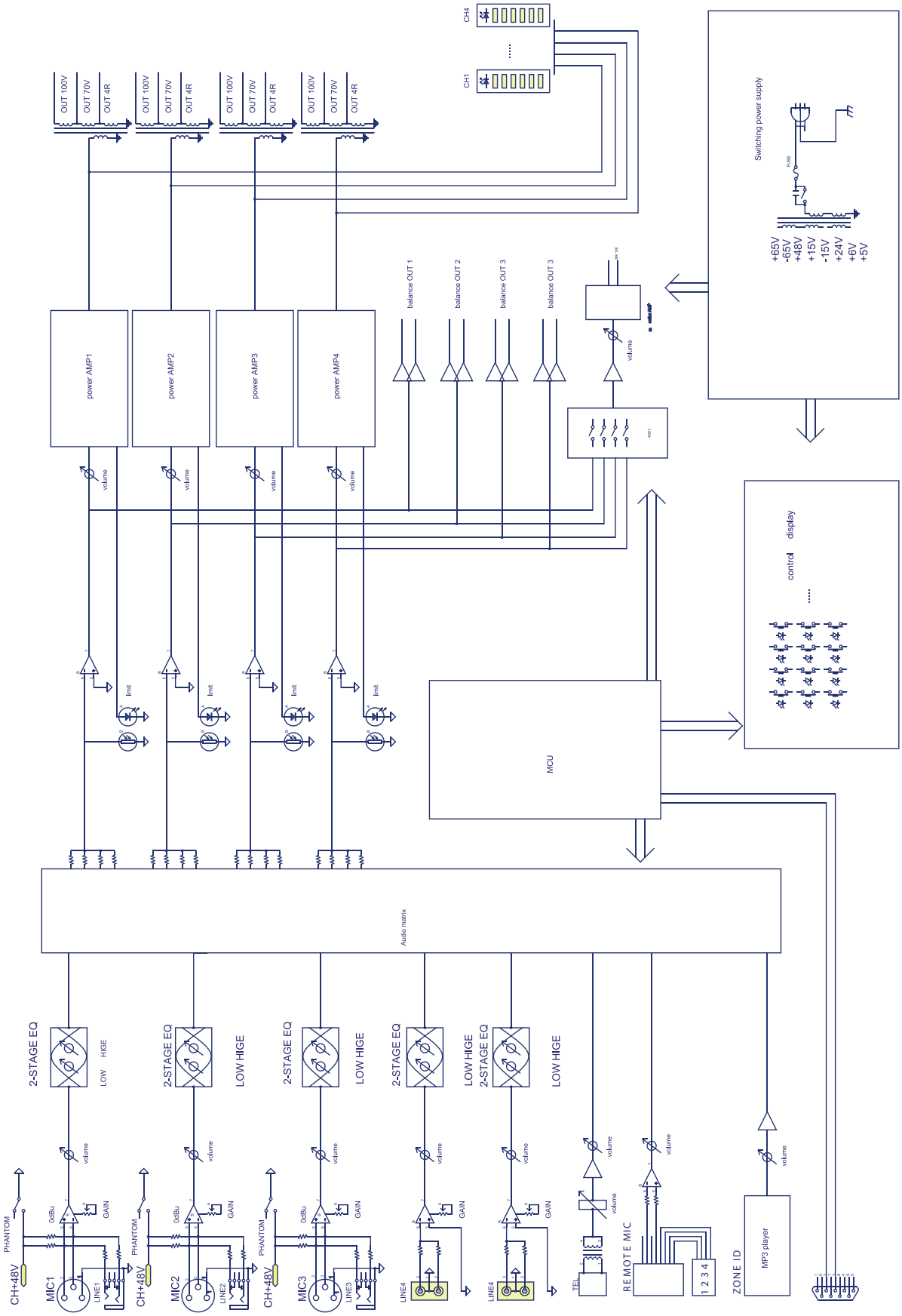
1. After connecting all audio sources and powering on the mixer amplifier, adjust the level of each audio input to achieve the desired “mix”. Care should be taken to when adjusting microphone input volumes and the master volume, adjust both of these in small increment’s to avoid feedback (howl around). The goal is to achieve a clear balance between music and voice ensuring announcements can be clearly heard.

2. The Clever Acoustics amplifiers all feature output VU meter’s with PEAK indication. Should the PEAK indicator illuminate (flashing) the output of the amplifier is too high, turn the master volume anti-clockwise to reduce the output.

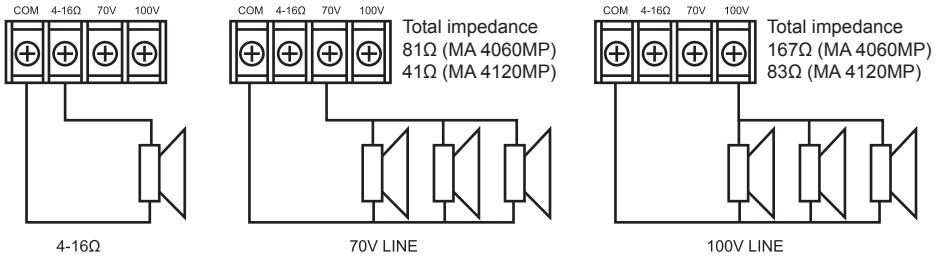
3. The Clever Acoustics amplifiers all feature protection with LED indication. Should the PROTECT indicator illuminate, turn the master volume control anti-clockwise fully and switch off the amplifier for 15 seconds as the amplifier may have entered PROTECT mode temporarily due to a peak signal, care should then be taken to ensure all input levels are set correctly. If the amplifier persists to enter PROTECT mode the amplifier should be switched off and left to cool for 5-10 minutes before switching back on. If the PROTECT indicator remains lit this indicates a problem with the amplifier or amplifier load (ie Short Circuit).

4. Speaker & Amplifier systems can produce high sound pressure levels, please operate all controls with caution to ensure people are not exposed to excessive or dangerous sound pressure levels.


SL 4120
Tel Input
MONITOR
PRIORITY
TEL.PAGING
ZONE1
ZONE2
ZONE3
ZONE4
LINE OUT
OUTPUT
CAUTION
DO NOT USE 4-16Ω, 70V AND 100V AT THE SAME TIME
WARNING DO NOT COVER
~240V 50Hz 450W
T6.3AL 250V
www.cleveracoustics.co.uk
TEL.
ZONE
VOLUME
LINE
PHANTOM
PUSH
GAIN
CH 5
CH 4
CH 3
CH 2
CH 1
RS232
REMOTE MIC INPUT
MUSIC SOURCE
MUSIC SOURCE
P M 600
MIC
MIC
MIC


CH4
CH1
OUT 100V
OUT 70V
OUT 4R
Switching power supply
+65V
-65V
+48V
+15V
-15V
+24V
+6V
+5V
balance OUT 1
balance OUT 2
balance OUT 3
balance OUT 3
power AMP1
power AMP2
power AMP3
power AMP4
volume
limit
control
display
MCU
Audio matrix
2-STAGE EQ
LOW HIGE
PHANTOM
CH+48V
0dBu
GAIN
MIC1
MIC2
MIC3
LINE1
LINE2
LINE3
LINE4
TEL
REMOTE MIC
1 2 3 4
ZONE ID
MP3 player

Speaker connections



Notes:

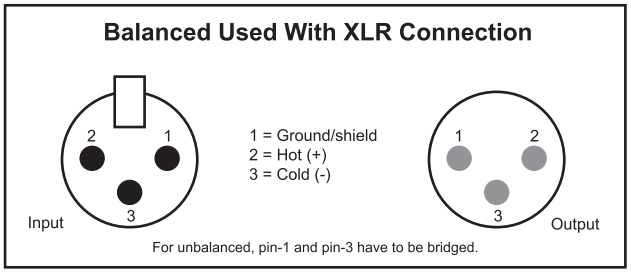
- Both the 4 - 16Ω and 100V terminals cannot be used at the same time.
- Impedances indicated in the figures represent the total speaker system (load) impedances.
- Loads presented to the amplifier must be equal to or greater than listed above. Speaker impedances must be measured using a true impedance meter, do not standard multimeters.

WARNING!

Be sure to attach the supplied terminal cover attached after connection. Because high voltage is applied to the speaker terminals, care should be taken never touch these terminals to avoid electric shock.

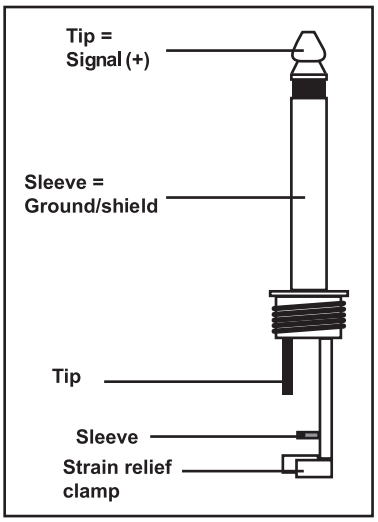
All speaker connections should be made using bare wire or suitable insulated crimp terminals. Please ensure no loose strands are present as these may short across terminals causing damage to the amplifier.

Balanced XLR jack connection

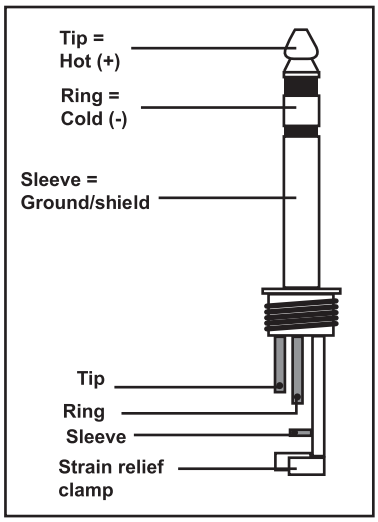


Jack plug

Unbalanced mono 1/4" jack plugs



Balanced/stereo 1/4" jack plugs



For connection of balanced and unbalanced plugs, the ring and sleeve have to be bridged in the stereo plug.

Problem chart

Problem	Cause	Solution
No power	The power cord is not connected.	Check the power cord and any extension cabled.
No sound	The power cord of the respective product is not connected properly or not at all. The connection socket or the plug is dirty.	Check the power cord and if the plugs are properly connected with the sockets. Clean the socket and/or the plug.
Noise	The input signal is too strong.	Reduce the input signal via the gain control.
Distorted sound	Load impedance is to low.	Check load impedance vs amplifier specification, reduce as required.

CAUTION - DANGER TO LIFE
DISCONNECT FROM THE MAINS BEFORE
STARTING MAINTENANCE OPERATION

Cleaning and Maintenance
We recommend a frequent cleaning of the product. Please use a soft lint free and moistened cloth.
Never use alcohol or solvents.

There are no serviceable parts inside the product except for the fuse. Maintenance and service operations are only to be carried out by authorised dealers.

Connection With The Mains
Connect the unit to the mains via the IEC mains inlet using the 13A UK - IEC cord supplied.

The earth has to be connected.

Switch the unit on. After switching on the speaker system, wait 8 - 10 seconds before you turn the volume control up in order to avoid speaker damage.

CAUTION! Increase the level of each channel up to the point where the clip LEDs illuminate.

Always check the sound pressure level with a meter in order to keep to the legal threshold.

Replacing the fuse
Only replace the fuse by a fuse of the same type and rating.

Before replacing the fuse, unplug the mains lead.

Should you need any spare parts, please use genuine parts.

Should you have any further questions, please contact your dealer.

Correct Disposal of this Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.